UNITED STATES PATENT AND TRADEMARK OFFICE

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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER
ARJOMANDI, NOOSHA

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 March 2008</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-39</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-39</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>07 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This application is in response to the application filed on March 10, 2008, having

34 claims pending in this application.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March

10, 2008 has been entered.

Response to the Arguments

3.   Applicants' arguments filed March 10, 2008 have been fully considered but moot

in view of the new grounds of rejections.

Specification

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

5.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

> **Claim 1** recites "wherein client system can access files on the second file system
>
> directly, absent the file server" lacks definiteness and is ambiguous and unclear
>
> how the client system can access the files on the second file system without
>
> passing through the file server. The specification of the instant application, Figs.
>
> 2, 13, & 15 have the client system 0101a and 0101b passing through NFS/CIFS
>
> server to be able to get to the second file system 0104d, (see paragraph [16,50,
>
> & 55]).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-2, 4-17, 19-27 and 33, 35-39 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cochran US Patent no. 6,718,447 (hereinafter Cochran) in

view of Ulrich et al., Patent no. 6,775,792 (hereinafter "Ulrich") US, Rajak US

Publication no. (20030126152) (hereinafter Rajak), and further in view of Terek US

Patent no. 6,804,700 (hereinafter Terek).

As to claims 1, 10, 23, 33, and 37, Cochran provides a Method and System for

Providing Logically Consistent Logical Unit Backup Snapshots Within One or More Data

Storage Devices. In particular, Cochran discloses the claimed features "receiving a file

request in connection with a file [as the applications running on host computer 402

generate I/O requests for data stored on primary LUN 420 of disk array 418, which is

mirrored by backup LUN 428 of secondary disk array 424. (column 5, lines 61-64 &

column 6, lines 8-10)]; performing one or more first operations on a first file system in

response to the file request, wherein the one or more first file operations are performed

on a copy of the file; [A WRITE request from output queue 404 thus is transmitted first

to the first disk array 418, queued to the input queue 416 of the first disk array 418. The

controller of the first disk array 418 dequeues WRITE requests from the input queue

416, executes the WRITE requests on the primary LUN 420 to write data to the primary

LUN, and queues mirror WRITE requests to output queue 422 for transmission to the

input queue 426 of the second disk array 424 for writing to the backup LUN 428.

(column 6, lines 9-17)]; selectively performing one or more second operations in

response to the file request, wherein the one or more second operations are performed

on [[a]] the copy of the file, wherein client systems can access files on the first file

system only via the file server, wherein client systems can access files on the second

file system directly, absent the file server" [all WRITE requests related to the first and

second transactions have been executed on the primary LUN 420, which is now in a

logically consistent state. WRITE request 412 has been placed on output queue 422 of

the first disk array 418 for transmission as a mirror WRITE request to the second disk

array 424. WRITE request 411 resides on the input queue 426 of the second disk array

424. The backup LUN 428 contains data associated with WRITE requests 406, 408,

and 407, and is therefore logically inconsistent with respect to both the first and second

transactions. Note that the data state of the primary LUN 420 is inconsistent with the

data of the backup LUN 428. (column 8, lines 3-14)]. Moreover, Cochran discloses

queuing up write requests, which are then mirrored to a backup LUN.

However, Cochran does not show or suggest a first file system different from a second

file system and a format of the first file system is different from a format of the second

file system. On the other hand, Ulrich discloses a first file system different from a

second file system [(creating first file system metadata on a first file server operable

connected to a network fabric, the first file system metadata describing at least files and

directories stored by the first file server; creating second file system metadata on a

second file server connected to the network fabric, the second file system metadata

describing at least files and directories stored by the second file server, the first file

system metadata and the second file system metadata includes directory information

that spans the first file server and the second file server, the directory information

configured to allow a requestor to find a location of a first file catalogued in the directory

information without prior knowledge as to a server location of the first file, see col.7,

lines 45-54)] a format of the first file system is different from a format of the second file

system [the network file storage system includes a first file server operably connected to

a network fabric; a second file server operably connected to the network fabric; first file

system information loaded on the first file server; and second file system information

loaded on the second file server, the first file system information and the second file

system information configured to allow a client computer operably connected to the

network fabric to locate files stored by the first file server and files stored by the second

file server without prior knowledge as to which file server stores the files. In one

embodiment, the first file system information includes directory information that

describes a directory structure of a portion of the network file system whose directories

are stored on the first file server, the directory information includes location information

for a first file, the location information includes a server id that identifies at least the first

file server or the second file server, (col. 6, lines 41-57) It would have been obvious to

one having ordinary skill in the art at the time the invention was made to modify

Cochran' system by providing a multiple file system different from each other. One

having ordinary skill in the art would have found it motivated to use such a modification

for the purpose of allowing the first file server to access files on the second disk array in

the event of a failure of the second file server.

However, neither Cochran nor Ulrich teach <u>when the file has not been copied to a</u>

<u>second file system different from the first file system, then creating a copy of the file on</u>

<u>the second file system having a file name the same as the file.</u> On the other hand, Rajak

discloses when the file has not been copied to a second file system different from the

first file system, then creating a copy of the file on the second file system having a file

name the same as the file [if the table does not exist in the staging database, the

process creates a new table, which includes column names, data types and number of

columns from the extracted data's metadata, (using same names), paragraph 0052].

Therefore, it would have been obvious to one having ordinary skill in the art to combine

the cited references. The motivation for doing so is to be able to create a new table

when the table does not exist, which will include all the column names, data types from

the extracted data's metadata.

However, Cochran, Ulrich, and Rajak do not disclose <u>creating a copy of the file on the</u>

<u>second file system having a filename different from the file.</u> On the hand, Terek

discloses creating a copy of the file on the second file system having a filename

different from the file [To distinguish the tentative URL, a second set of rules is then

followed to create the URL so as to guarantee uniqueness of the resulting URL. In one

example, this is accomplished by a postfix associated with the hash value for "hello"

being appended to the human-readable property "hello." In this example, since the

postfix for the hash value of hello is "1", the second set of rules would result in including

"hello-1" in the newly created URL (e.g., http://hello-1.html), col. 10, lines 4-12].

Therefore, it would have been obvious to one having ordinary skill in the art to combine

the cited references. One ordinary skill in the art would have been motivated to add a

postfix to the URL to make a distinguish between the URLs.

As to claim 2, Ulrich discloses the claimed "wherein each file contained in the second

file system comprises sequentially allocated blocks" [(Each logical block is allocated to a

particular parity group type and may be subsequently accessed during data storage

processes when the group type is requested for data storage. During initialization of the

disk array 140, the server 130 allocates all available disk space to parity groups 2335 of

various lengths or sizes which are subsequently used to store data and information,

(see col.51, lines 18-23).].

As to claim 4, Ulrich discloses the claimed "wherein the format of the first file system is

not a publicly known format and the format of the second file system is a publicly known

format" [the first file system metadata and the second file system metadata includes

directory information that spans the first file server and the second file server, the

directory information configured to allow a requestor to find a location of a first file

catalogued in the directory information without prior knowledge as to a server location of

the first file, (see col.7, lines 45-54)].

As to claim 5, Ulrich discloses the claimed "wherein each file contained in the second

file system comprises one or more blocks of physical storage allocated in sequential

order" [the ordering or sequence of the blocks   is maintained through a linked list

organizational schema, (see col.48, lines 35-48)].

As to claim 6, Ulrich discloses "wherein the step of performing one or more second

operations is performed if the file request includes a write-type operation on the file"

[instruction code is set up by the host CPU when the transfer is queued, and can specify

that data is to be written or read to one or both of the cache memories, (see col.60, lines

25-32)].

As to claim 7, Ulrich discloses "wherein the step of performing one or more second

operations is performed only after completing the step of performing one or more first

operations" [sending a root-directory lookup request to a first file server operable

connected to a network fabric; receiving a first lookup response from the first file server,

the first lookup response includes a server id of a second file server connected to the

network fabric; sending a directory lookup request to the second file server; and

receiving a file handle from the second file server, (col.5, lines 65-col.6, line 8)].

As to claim 8, Ulrich discloses the claimed "wherein the step of performing one or more

second operations is performed is queued up in a list of operations to be performed on

the second file system, wherein the list of operations comprise operations from previous

file" [As blocks are written to or read from the disk array, the server uses the links to

identify the order of the blocks used for each parity group, (col.48, lines 35-48)].

As to claim 9, Ulrich discloses the claimed "performing one or more second operations

is performed if the file close operation" [as the second file system information including

a second intent log of proposed changes to the second metadata, the first file server

having a copy of the second intent log, the second file server maintaining a copy of the

first intent log, thereby allowing the first file server to access files on the second disk

array in the event of a failure of the second file server, (see col. 6, lines 51-57)].

As to claims 11-16:

The limitations of claims 11-16 have been noted in the rejection of claims 2-9 above.

They are, therefore, rejected under the same rationale.

As to claim 17, Cochran, Ulrich, Rajak, and Terek disclose substantially the invention

as claimed. However, Cochran, Rajak, and Terek do not show or suggest that the

second file operations on the second file system are performed after the file request has

on the first file system has completed, as recited in claim 17. On the other hand, Ulrich

discloses the use of the second file operations on the second file system are performed

after the file request has on the first file system has completed (col.6, lines 45-58). It

would have been obvious to one having ordinary skill in the art at the time the invention

was made to modify Cochran Rajak, and Terek' system by using second file operations

on the second file system are performed after the file request has on the first file system

has completed. One having ordinary skill in the art would have found it motivated to use

such a modification for the purpose of allowing the first file server to access files on the

second disk array in the event of a failure of the second file server.

The limitations of claim 19 have been noted in the rejection of claims 2, and 4-9

above. It is, therefore, rejected under the same rationale.

As to claim 20, Cochran, Ulrich, Rajak, and Terek disclose substantially the invention

as claimed. However, Cochran, Rajak, and Terek do not show or suggest that if the

operation on the first file system is a close operation then copying the file to the second

file system, as recited in claim 20. On the other hand, Ulrich discloses the use wherein if

the operation on the first file system is a close operation then copying the file to the

second file system (col.6, lines 35-40). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to modify Cochran, Rajak,

and Terek' system by determining if the operation on the first file system is a close

operation then copying the file to the second file system. One having ordinary skill in the

art would have found it motivated to use such a modification for the purpose of allowing

the first file server to access files on the second disk array in the event of a failure of the

second file server.

The limitations of claims 21-22 have been noted in the rejection of claims 2, and 4-9

above. They are, therefore, rejected under the same rationale.

Independent claims 23-27 recites similar elements as claims 1-2, and 4-9, in file

server. They are rejected under the same rationale.

Independent claims 33 and 35-36 recites similar elements as claims 1-2, and 4-9, in

an application server. They are rejected under the same rationale.

Independent claims 37-39 recites similar elements as claims 1-2, and 4-9, in means

plus function language. They are rejected under the same rationale.

5.   **Claims 28-32 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cochran US Patent no. 6,718,447 (hereinafter Cochran) in view of Ulrich et al.,

Patent no. 6,775,792 (hereinafter "Ulrich") US, Rajak US Publication no.

(20030126152) (hereinafter Rajak), Terek US Patent no. 6,804,700 (hereinafter Terek).

further in view of the Applicant admitted prior art (see specification page 1-2 and fig.1).

__Independent claims 28-32 and 34__ recite similar elements as claims 1-2, and 4-9, in a

file server. Neither Cochran, nor Ulrich disclose a NAS gateway; a storage area network

(SAN), the physical storage component comprising a portion of the SAN, the NAS

gateway configured to communicate over the SAN to access the physical storage

component. However, applicant admitted prior art discloses the claimed "a NAS

gateway; a storage area network (SAN), the physical storage component comprising a

portion of the SAN, the NAS gateway configured to communicate over the SAN to

access the physical storage component (see, fig.1 and specification page 1, section

[02]-[07]). Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify the Cochran, and Ulrich' system by

incorporating the use of SAN and NAS gateway. One having ordinary skill in the art

would have found it motivated to use such a NAS gateway into Cochran and Ulrich'

system for the purpose of providing access to the storage area network, thereby

providing high capacity storage.

REMARKS

8.   Applicant argued, page 9, since Cochran does not teach "a second file system",

it follows that Cochran cannot teach "wherein client systems can access files on the first

file system only via the file server, wherein client systems can access files on the

second file system directly, absent the file server."

9.   Examiner respectfully disagrees with this assertion. As being mentioned in the

last office action, Cochran does not disclose the second file system. However, using the

35 U.S.C 103(a) reference, Ulrich discloses creating second file system metadata on a

second file server, which the second file system metadata describes files and

directories stored on the second file server (col. 7, line 45).

10.   Applicant argued, page 9, that Ulrich does not show "wherein client systems can

access files only via the file server, wherein client systems can access files on the

second file system directly, absent the file server."

11.   Examiner respectfully disagrees with this assertion. According to the

specification of the instant application [16, 50, and 55], Figs. 2, 13, & 15 the client

system 0101a and 0101b passing through NFS/CIFS server to be able to get to the

second file system 0104d. Based on this interpretation, Ulrich discloses that one or

more clients operating on one or more different platforms are connected to the plurality

of servers.

12.   Applicant argued, page 9, neither Cochran nor Ulrich teach "when the file has not

been copied to a second file system different from the first file system, then creating a

copy of the file on the second file system having a file name the same as the file,

otherwise creating a copy of the file on the second file system having a filename

different from the file."

13.   The new reference, Rajak, discloses when the file has not been copied to a

second file system different from the first file system, then creating a copy of the file on

the second file system having a file name the same as the file [if the table does not exist

in the staging database, the process creates a new table, which includes column

names, data types and number of columns from the extracted data's metadata, (using

same names), paragraph 0052]. And Terek discloses creating a copy of the file on the

second file system having a filename different from the file [To distinguish the tentative

URL, a second set of rules is then followed to create the URL so as to guarantee

uniqueness of the resulting URL. In one example, this is accomplished by a postfix

associated with the hash value for "hello" being appended to the human-readable

property "hello." In this example, since the postfix for the hash value of hello is "1", the

second set of rules would result in including "hello-1" in the newly created URL (e.g.,

http://hello-1.html), col. 10, lines 4-12].

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Owhadi (US 20020188853 A1`) disclose "Computer systems."

15.   The examiner requests, in response to this Office action, support be shown for

language added to any original claims on amendment and any new claims. That is,

indicate support for newly added claim language by specifically pointing to page(s) and

line no(s) in the specification and/or drawing figure(s). This will assist the examiner in

prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the

patentable novelty which he or she thinks the claims present, in view of the state of the

art disclosed by the references cited or the objections made. He or she must also show

how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Noosha Arjomandi whose telephone number is (571)

272-9784. The examiner can normally be reached on Monday-Friday 7:30-5:00 E.S.T

(ALT Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 3, 2008   /Noosha Arjomandi/

                                                     Examiner, Art Unit 2167

/John R. Cottingham/

Supervisory Patent Examiner, Art Unit 2167